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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,044	03/29/2004	Colin H. Self	44008.011000	1445

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EXAMINER

LUNDGREN, JEFFREY S

ART UNIT	PAPER NUMBER
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1639

MAIL DATE	DELIVERY MODE
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07/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,044	<b>Applicant(s)</b> SELF ET AL.	
	<b>Examiner</b> Jeff Lundgren	<b>Art Unit</b> 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on \_\_\_\_\_.
- 2a)  This action is FINAL.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1, 15, 16 and 18-23 is/are pending in the application.
  - 4a) Of the above claim(s) 15, 16 and 18 is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1 and 19-23 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All    b)  Some \*    c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application
- 6)  Other: \_\_\_\_\_

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## DETAILED ACTION

### *Status of the Claims*

Claims 1, 15, 16 and 18-23, are pending in the instant application; claims 15, 16 and 18, are withdrawn as being directed to a non-elected species (*i.e.*, do not read on 2-nitrobenzyloxycarbonyl); claims 1 and 19-23, are the subject of the Office Action below.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A Request for Continued Examination under 37 CFR § 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR § 1.114, and the fee set forth in 37 CFR § 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR § 1.114. Applicant's submission filed on April 6, 2007, has been entered.

### *Priority*

Pending a determination on Applicants' Petition Pursuant to 37 C.F.R. § 1.78(a)(3), priority to applications PCT/GB94/02359 and British Application No. 9322156.2 is denied.

As stated in the previous Office Action, Applicants' application was filed on March 29, 2004, and was filed after the time period set forth in 37 C.F.R. § 1.78(a)(2)(ii) for claiming priority to applications PCT/GB94/02359 and British Application No. 9322156.2. Applicants' priority claim to applications PCT/GB94/02359 and British Application No. 9322156.2 is therefore improper, and is denied. See 37 C.F.R. § 1.78(a)(2)(ii):

(ii) This reference must be submitted during the pendency of the later-filed application. If the later-filed application is an application filed under 35 U.S.C. 111(a), this reference must also be submitted within the later of four months from the actual filing date of the later-filed application or sixteen months from the filing date of the prior-filed application. If the later-filed application is a nonprovisional application which entered the national stage from an international application after compliance with 35 U.S.C. 371, this reference must also be submitted within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371 (b) or (f) in the later-filed international application or sixteen

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months from the filing date of the prior-filed application. These time periods are not extendable. Except as provided in paragraph (a)(3) of this section, the failure to timely submit the reference required by 35 U.S.C. 120 and paragraph (a)(2)(i) of this section is considered a waiver of any benefit under 35 U.S.C. 120, 121, or 365(c) to such prior-filed application. The time periods in this paragraph do not apply if the later-filed application is:

- (A) An application for a design patent;
- (B) An application filed under 35 U.S.C. 111 (a) before November 29, 2000; or
- (C) A nonprovisional application which entered the national stage after compliance with 35 U.S.C. 371 from an international application filed under 35 U.S.C. 363 before November 29, 2000.

The specification is objected to for an improper priority claim. Applicants are required to amend the specification deleting reference to the aforementioned applications in the first sentence of the specification in compliance with 37 CFR § 1.78(a) by filing an amendment to the first sentences of the specification. *See* MPEP § 201.11.

#### ***Withdrawn Rejections***

Any rejections raised in the previous Office Action that are not reiterated in the instant Office Action are considered withdrawn.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 19-23, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 1, and all claims dependent therefrom, are indefinite for reciting the phrase “the activity associated with said active site or sites” because this phrase does not have proper antecedent basis.

Claim 19, and all claims dependent therefrom, are indefinite for reciting the phrase “the ability of the antibody to bind” because this phrase does not have proper antecedent basis.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

#### Maintained Rejections:

The rejection of claims 1 and 22, under 35 U.S.C. 102(b) as being anticipated by each of: Eby R., *Carbohydrate Research* 70(1):75-82 (1979); Thompson *et al.*, *Biochemical and Biophysical Research Communications* 201(3):1213-1219 (1994), and Goldmacher *et al.*, *Bioconjugate Chemistry* 3(2):104-7 (1992), are all maintained.

Applicants contend that the rejections are moot in view of their amendment to the specification claiming priority to PCT/GB94/02359 and British Application No. 9322156.2, thereby removing the cited art as prior art. Applicants also contend that their amended claims no longer read on the prior art. Both arguments have been fully considered, however neither is persuasive.

First, Applicants' are not entitled to priority of applications PCT/GB94/02359 and British Application No. 9322156.2 for the reasons set forth above.

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Second, Applicants claims still read on the art of record for the reasons provided in the following rejections below.

The rejection of claims 1 and 19-23, under 35 U.S.C. 102(b) as being anticipated by each of: Thompson *et al.*, *Biochemical and Biophysical Research Communications* 201(3):1213-1219 (1994), and Goldmacher *et al.*, *Bioconjugate Chemistry* 3(2):104-7 (1992), are all maintained.

Claim 1 is directed to a composition, wherein the composition comprises a core molecule having one or more active sites, and a plurality of smaller labile residues reversibly attached to the core molecule. The attachment of the labile residues causes an alteration in the core's binding, and the labile residue is dissociable under electromagnetic energy, such that the active site regains activity.

Claim 19 is similar to claim 1, but specifies the core as an antibody. Claims 20 and 21 specify that the labile residue is 2-nitrobenzyloxycarbonyl. Claims 22 and 23 limit the electromagnetic radiation to UV light.

Claims 1 and 22 are anticipated by Eby:

Eby teaches an oligosaccharide (*i.e.*, core molecule) modified with 2-(4-nitrophenyl)ethanol (*i.e.*, smaller labile residues) on multiple active sites (pages 76 and 77), and teaches that the activity of modified active sites effects activity, *i.e.*, the nonterminal residues along the dextran chain (page 78), and the residues have the property of being labile under electromagnetic energy and that reversibly restore the oligosaccharide activity with its antibody, and the composite is sensitive to UV light, as required by claims 22.

Claims 1 and 19-23, are anticipated by Thompson:

Thompson teaches methods to allow the reversible binding of up to 15 nitrobenzyl residues per bovine serum albumin mol. and show 95% of these residues can be removed by exposure to UV light for 10 minutes. Thompson not only teaches that the general non-specific coating method can be presented by a model system, but is applicable to a wide range of proteins with important biological functions. Potentially, any protein could be coated with sufficient

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photo-removable groups to inhibit its biological function. Thompson teaches that the activity may then be restored at will by exposure to UV light removing the coupled 2-nitrobenzyl groups.

Claims 1 and 19-23 are anticipated by Goldmacher:

Goldmacher teaches a novel photocleavable protein cross-linking reagent that has been used for conjugation of the ribosome-inactivating protein pokeweed antiviral protein from seeds of *Phytolacca americana* (PAP-S), with either the monoclonal antibody 5E9 directed against the human transferrin-receptor or the B-chain of ricin that binds to cell-surface oligosaccharides bearing terminal D-galactose residues. When irradiated with near-UV light (350 nm), the linker of these conjugates undergoes photolytic degradation, resulting in the release of native toxin that is fully functional. The cytotoxicities of these 5E9-PAP-S and ricin B-chain-PAP-S conjugates for HeLa cells could be enhanced by irradiating the cells with light after they had internalized the conjugates. The labile residue is the HN-RIP that is attached via the 2-(4-nitrophenyl)ethanol, which in turn is attached to the antibody. Although the "labile" 2-(4-nitrophenyl)ethanol is not directly bound to the antibody, each of the claims read on Goldmacher.

Accordingly, claims 1 and 19, 20, 22 and 23, are anticipated by the art of record.

New Grounds of Rejection:

Claims 1 and 19-23, are rejected under 35 U.S.C § 102(e), as being anticipated by Rothschild *et al.*, U.S. Patent No. 6,589,736, issued on July 8, 2003.

Claim 1 is directed to a composition, wherein the composition comprises a core molecule having one or more active sites, and a plurality of smaller labile residues reversibly attached to the core molecule. The attachment of the labile residues causes an alteration in the core's binding, and the labile residue is dissociable under electromagnetic energy, such that the active site regains activity.

Claim 19 is similar to claim 1, but specifies the core as an antibody. Claims 20 and 21 specify that the labile residue is 2-nitrobenzyloxycarbonyl. Claims 22 and 23 limit the electromagnetic radiation to UV light.

Rothschild teaches agents and conjugates that can be used to detect and isolate target components from complex mixtures such as nucleic acids from biological samples, cells from

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bodily fluids, and nascent proteins from translation reactions. Agents comprise a detectable moiety bound to a photoreactive moiety. Conjugates comprise agents coupled to substrates by covalent bounds which can be selectively cleaved with the administration of electromagnetic radiation. Targets substances labeled with detectable molecules can be easily identified and separated from a heterologous mixture of substances. Exposure of the conjugate to radiation releases the target in a functional form and completely unaltered. Using photocleavable molecular precursors as the conjugates, label can be incorporated into macromolecules, the nascent macromolecules isolated and the label completely removed (see Summary of the Invention). Rothschild teaches an antibody attached via a 2-nitrobenzyloxycarbonyl group (see Figs. 4, 7 and 12, and description thereof).

Accordingly, the claims are anticipated.

### Conclusions

No claim is allowable.

If Applicants should amend the claims, a complete and responsive reply will clearly identify where support can be found in the disclosure for each amendment. Applicants should point to the page and line numbers of the application corresponding to each amendment, and provide any statements that might help to identify support for the claimed invention (*e.g.*, if the amendment is not supported *in ipsius verbis*, clarification on the record may be helpful). Should Applicants present new claims, Applicants should clearly identify where support can be found in the disclosure.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Jeff Lundgren whose telephone number is 571-272-5541. The Examiner can normally be reached from 7:00 AM to 5:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, James Schultz, can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSL



**MARK L. SHIBUYA  
PRIMARY EXAMINER**